

Synthesizing Information

STUDENT OBJECTIVE

- Synthesize information from multiple sources

RESOURCES AND PREPARATION

You will need photocopies for students of:

- **Student Lesson Summary**, p. 127
- **Teaching Model**, Three Sources on Tsunamis, p. 128
- **Practice Model**, p. 129
- **Practice Worksheets**, Levels A and B, pp. 130-131
- **Reteaching Worksheet**, p. 132

Teach

1. **Synthesizing Information:** Explain that **synthesizing information** is an important part of using research to create something original.
 - Point out that synthesizing information is like building with a free form kit of blocks: you use assorted parts and pieces and put them together with your own ideas to create something entirely new. Explain that, instead of blocks, the pieces are ideas.
 - Brainstorm a list of what the pieces might be. (*Sample: facts, statistics, opinions, photographs, or stories, taken from research materials.*) Be sure to include prior knowledge as on piece of information on the list.
2. **Teaching Synthesizing Information:** Distribute the **Lesson Summary** Preview the **Academic Vocabulary**. Guide students through **Here's How**.
 - Explain that in order to synthesize information, researchers must bring their own insights to the materials they read. Then write the following sentences on the board or read them aloud:

EXAMPLE

1. Ross liked mixing paint while it was on the canvas to get unexpected effects.
 2. Leo accidentally squeezed a honey-colored pigment into the slate-gray paint on his palette. He paused a moment, then began blending the colors.
 3. "Have you ever tried mixing dust into your pigments?" Kiki asked. "It might be worth a look."
- Ask students" What sort of original writing might you create synthesizing information in the three sentences combined with your own ideas, and with further research? (*Samples: an essay about artists mixing paints; a story about three artists working in parallel who are drawn together by circumstance.*)
 - Point out that often there will be more than one way to synthesize a given grouping of information. The key is to find a logical and illuminating way to fit your "blocks" of information together, first in your mind and then on the page. Then point out that in synthesizing the above information, students are applying skills

SYNTHESIZING INFORMATION, CONTINUED

similar to those demonstrated by the artists: They are creatively mixing elements they have in hand to arrive at something new and different.

- 3. Guided Practice:** Distribute photocopies of the **Teaching Model** and have students read each excerpt. Model how to synthesize information by applying points from the **Lesson Summary** as follows.

- **Main Message:** After students have read all three items, have them turn the page over and discuss what complete idea or main message is most memorable about each item? (*Sample: Item One—The tsunami of 2004 had a massive death toll; Item Two—Tsunamis travel at incredible speeds; Item Three—Mangrove forests protected some residents from the tsunami’s destruction.*) Next, have students reread the excerpts and underline details that support each main idea.
- **Paraphrasing:** Point out to students that when they expressed the main message they were paraphrasing main ideas in their own words. Then have them review the details they underlined. Ask: What difficult concepts or wording in each item might be paraphrased? (*Sample: In Item One, the first paragraph could be rewritten as follows: “Tsunamis are sets of sudden, violent ocean waves set off by earthquakes, volcanic eruptions, underwater landslides, or asteroids.”*)
- **Intended Purpose and Audience:** Explain to students that they must sometimes infer from tone and context to determine author’s purpose. Then ask: What is the author’s purpose and intended audience in each selection? (*All three items are written to inform; Item Two, written for an encyclopedia, is also written to explain a process and relies most heavily on facts and statistics. Item one is written for children, perhaps to be read in school; Item three for those who read news online.*)
- **Questioning and Comparing:** Pose discussion questions such as the following to students, and encourage them to come up with questions of their own. Ask: What do the three excerpts have in common? How do they differ? (*All three are about tsunamis; Item One was written immediately after the December 2004 south Asian tsunami; Item Two defines tsunamis in general terms; Item Three summarizes a study conducted well after the 2004 tsunami.*)
- **Connecting to Experience:** Ask students to discuss their prior knowledge of tsunamis. Ask them to suggest ways in which a tsunami warning system might be improved. (*Answers will vary. Efforts are in fact under way to more fully develop an existing system that uses oceanic sensing devices tied to high-tech monitoring stations.*)
- **Synthesizing:** Ask students to pull together what they learned from each excerpt. What questions or thoughts were provoked by the reading. As they paraphrase main ideas and add their own thoughts. Ask them to suggest an original opening line for a report or other presentation about tsunamis. (*Sample: The monumental death toll from the south Asian tsunami was a result of the fact that tsunamis travel at incredible speeds over long distances in a way that makes it difficult for the average coastal dweller to detect.*)

QUICK CHECK. Encourage students to reread the **Teaching Model** and synthesize the information in an entirely different way. (*Students may make the case that the death toll from*

SYNTHESIZING INFORMATION, CONTINUED

the South Asian tsunami could have been significantly lessened if all vulnerable coastal communities had been protected by shields of vegetation.)

Practice and Apply

Activities involving synthesizing information appear on pp. 130–131.

- NOTE: **Both** worksheets require the **Practice Model**, p. 00.
- Assign **Practice Worksheet A** to students who need more structured activities.
- Assign **Practice Worksheet B** to grade-level and above-level students.

Sample Answers: Practice Worksheet A

Students should be able to synthesize all three selections by identifying and amplifying on the subject of the bass guitar. One such synthesis might be: The bass guitar, a deep-voiced, four-stringed relative of the guitar, has anchored modern music since the heyday of the “Motown Sound” in the 1960s.

Sample Answers: Practice Worksheet B

1. *They are all about the bass guitar.*
2. *Why does a bass have a larger body and longer neck than a guitar? How old was James Jamerson when he began to play the bass? Doesn’t a single note represent a single sound? What is meant by a note’s “color?”*
3. *The bass guitar, a deep-voiced, four-stringed relative of the guitar, has anchored modern music since the heyday of the “Motown Sound” in the 1960s.*

Assess and Reteach

Use these guidelines to determine if students need the **Reteaching Worksheet**.

- **Practice Worksheet A:** Students should complete the entire graphic organizer. Their answers to item 3 should include at least **two** main points from the passages and at least **one** original idea.
- **Practice Worksheet B:** Students should identify a valid similarity in item 1. Accept all complete questions in item 2. Student answers to item 3 should include at least **two** main points from the passages and at least **one** original idea.

For students who need reteaching, review the **Lesson Summary**. Work with small groups of students to synthesize the **Practice Model** information in the graphic organizer on **Practice Worksheet A**. Or help them use the graphic organizer to synthesize the information in the excerpts on the **Teaching Model**. Then assign the **Reteaching Worksheet**, p. 132.

Answer Key: Reteaching Worksheet

1. *Sample: The paper clip was a symbol of resistance/High school freshmen made the world’s longest paper clip chain/Norwegian John Vaaler invented the paper clip*
2. *The paper clip is the subject of each passage.*
3. *Some students might create a timeline of notable events in the history of the paper clip since John Vaaler invented it in 1899.*